

Answers to “Questions and Observations”

1. The scale distance model and the scale diameter model of the planets are made using **2** different scales. The scale distance model is 1:149,600,000. The scale diameter model is 1:12,756
2. You cannot cut or tear the Gummy Bears into hundredths of pieces.
3.
 - a. There is a repeating pattern of matter – emptiness – or a lack of the presence of matter.
 - b. Life is only found in the habitable zone.
 - c. Jupiter’s gravity may make Mar’s orbit more elliptical– from eccentricity data from the Orbits Lab.
 - d. Most of the observable matter is in the inner solar system
 - e. The inner planets are dense and small. The outer planets are light and large.
 - f. The distance between the orbits generally increases the further you go out.
 - g. Objects orbit generally in the same plane.
4. Since the solar system formed from a rotating cloud of gas and dust that shrank and thinned over time, the planets were formed all in the same plane with elliptical orbits at various distances from the sun.
5. Gravity helped the accretion of the planets around centers of density. It also aided in the formation of the sun, pulling in more and more material as the density and therefore the gravity increased. The gravity of the sun also keeps the planets in their orbits, with the inertia of each planet contributing to its unique orbit.